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AMENDMENT UNDER 37 C.F.R. § 1.114(c)
Application No. 08/939,442

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

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1. (currently amended) A multi-media system comprising:
an input device for entering program information of intended programs;
a receiver including a first digital interface, for generating a control command based on the program information received from said input device, and for transferring the control command ~~in an asynchronous transfer mode~~ via said first digital interface; and
a recording/reproducing device including a second digital interface, for decoding the control command transferred from said receiver, and for recording/reproducing a multi-program transport stream being received, corresponding to the program information obtained by decoding the received command, ~~wherein the control command is not included in program specific information (PSI) of the transport stream.~~

2. (original) The multi-media system of claim 1, wherein said input device is a remote controller.

3. (currently amended) A multi-media system comprising:
a receiver for receiving a multi-program transport stream and a recording/reproducing device for recording/reproducing the multi-program transport stream, said receiver comprising:

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a first signal processor for parsing program specific information (PSI) of the received multi-program transport stream and decoding a video signal and an audio signal of an intended program based on the parsed PSI;

an input device for entering program information of intended programs; and

a first digital interface for receiving program information of an intended program from said input device, generating a program information control command based on the program information of the intended program, and transmitting a the multi-program transport stream provided by said first signal processor and the program information control command; ~~wherein the program information control command is not included in the PSI of the transport stream; and~~

said recording/reproducing device comprising:

a second digital interface for receiving the program information control command and the multi-program transport stream from said first digital interface and decoding the program information control command to obtain the program information of the intended program; and

a second signal processor for extracting the intended program from the multi-program transport stream received by said second digital interface, based on the program information, and recording the extracted program on recording media during a recording mode, and generating a reproduced transport stream which is provided to the second digital interface during a playback mode.

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4. (original) The multi-media system of claim 3, wherein said input device is a remote controller.

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5. (original) The multi-media system of claim 4, wherein said receiver is connected to one or more recording/reproducing devices using the digital interface and said recording/reproducing devices are controlled by said input device.

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6. (previously presented) The multi-media system of claim 3, wherein said first digital interface generates the program information control command based on the parsed PSI.

7. (original) The multi-media system of claim 3, wherein said first and second digital interfaces are each an IEEE 1394 interface.

8. (original) The multi-media system of claim 7, wherein said first digital interface transfers the transport stream as isochronous packets during an isochronous transfer mode, and transfers the program number as asynchronous packets during an asynchronous transfer mode using a control command set.

9. (original) The multi-media system of claim 8, wherein the control command set is an audio/video control command and transaction set (AV/C CTS).

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10. (original) The multi-media system of claim 3, wherein said first digital interface transfers a multi-program transport stream isochronous packets in an isochronous transfer mode, and said second digital interface transfers a single program transport stream as isochronous packets in the isochronous transfer mode during a playback mode.

11. (original) The multi-media system of claim 3, wherein said first digital interface transfers a multi-program transport stream as isochronous packets in an isochronous transfer mode, and said second digital interface transfers a multi-program transport stream as isochronous packets in the isochronous transfer mode during a playback mode.

12. (original) The multi-media system of claim 3, wherein said first digital interface transfers a single program transport stream as isochronous packets in an isochronous transfer mode, and said second digital interface transfers a single program transport stream as isochronous packets in the isochronous transfer mode during a playback mode.

13. (previously presented) The multi-media system of claim 7, wherein said first digital interface comprises:

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a first microcomputer including a transaction layer and a serial bus management layer, as software, for generating the program information control command based on the program information received from the input device, using a write transaction and a read transaction;

a first link layer for adding an asynchronous header to the program information control command received from the first microcomputer to convert the program information control command into serial data; and

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a first physical layer for converting the serial data into an electrical signal.

14. (original) The multi-media system of claim 13, wherein said receiver further comprises a first extra header inserter/ remover for inserting an extra header into a transport stream being received, to form a data block packet for the IEEE 1394 transfer, and for removing the extra header inserted into a reproduced data block packet, provided by said first digital interface, for the IEEE 1394 transfer.

15. (previously presented) The multi-media system of claim 13, wherein said second digital interface comprises:

a second physical layer for converting the program information control command electrical signal, transferred from said first physical layer, into digital data;

a second link layer for converting the program information control command digital data into parallel data, and for removing an asynchronous header; and

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a second microcomputer including a transaction layer and a serial bus management layer, as software, for recording the program information on a predetermined region of a recording medium by recognizing the program information control command during a recording mode, and for reading out the program information of the intended program recorded in the predetermined region during a playback mode.

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16. (original) The multi-media system of claim 15, wherein said recording/reproducing device further comprises a second extra header inserter/remover for removing an extra header inserted into an data block packet provided by said second digital interface for a IEEE 1394 transfer, and for inserting an extra header into the transport stream reproduced from the second signal processor, to form the data block packet for the IEEE 1394 transfer.

17. (previously presented) The multi-media system of claim 3, wherein said first signal processor further comprises an on-screen graphic (OSG) generator for displaying the program guide information of a transport stream being received on an OSG display.

18. (previously presented) The multi-media system of claim 17, wherein said OSG generator mixes the program guide information with a graphic signal of a background screen to be provided to said OSG display.

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19. (previously presented) The multi-media system of claim 17, wherein said OSG generator mixes the program guide information with the decoded video signal to be provided to said OSG display.

20. (previously presented) The multi-media system of claim 3, wherein said first signal processor further comprises an on-screen display (OSD) generator for displaying the program guide information of a transport stream being received on an OSD display.

21. (previously presented) The multi-media system of claim 17, wherein the second signal processor does not parse the program guide information from a transport stream being received via the second digital interface.

22. (currently amended) A method for transferring and receiving program information between a receiver with a digital interface for receiving a multi-program transport stream and a recording/reproducing device with a digital interface for recording/reproducing the multi-program transport stream on/from a recording medium, the method comprising the steps of:

- (a) providing program information of an intended program to be recorded; and
- (b) generating a program information control command corresponding to the provided program information to transfer the program information control command, from the receiver to the recording/reproducing device, ~~wherein the program information control command is not included in program specific information (PSI) of the transport stream.~~

23. (previously presented) The method of claim 22, wherein the step (a) comprises the steps of:

- (a1) parsing the program guide information from the transport stream;
- (a2) displaying the parsed program guide information; and
- (a3) providing the program information of the intended program according to the displayed program guide information.

24. (previously presented) The method of claim 23, wherein the parsed program guide information of step (a2) is displayed on an OSG display.

25. (original) The method of claim 22, further comprising the steps of:

- (c) transferring a command for inquiring whether to permit the transfer of the program number of the program recorded in the recording medium, from the receiver to the recording/reproducing device, during a playback mode; and
- (d) receiving the program number of the program recorded in the recording medium, from the recording/reproducing device.

26. (currently amended) A method for transferring program information between a receiver with a digital interface for receiving a multi-program transport stream and a recording

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device with a digital interface for recording the multi-program transport stream on a recording medium, the method comprising the steps of:

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- (a) providing program information of an intended program to be recorded;
- (b) transferring a command for inquiring as to whether to permit the recording of the program;
- (c) receiving a response for permitting the recording of the program from the recording device;
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- (d) transferring a command for performing the recording of the program corresponding to the program information provided in the step (a), ~~wherein the command is not included in program specific information (PSI) of the transport stream;~~ and
- (e) receiving a response for notifying of the permission of the recording of the program corresponding to the program information, from the recording device.

27. (previously presented) The method of claim 26, wherein the step (a) comprises the steps of:

- (a1) parsing the program guide information from the transport stream;
- (a2) displaying the parsed program guide information; and
- (a3) providing the program information of the intended program according to the displayed program guide information.

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28. (previously presented) The method of claim 27, wherein step (a2) comprises displaying the parsed program guide information on an OSG display.

29. (previously presented) The method of claim 27, wherein step (a2) comprises displaying the parsed program guide information on an OSD display.

30. (currently amended) A method for receiving program information by a receiver with a digital interface for receiving a multi-program transport stream and a reproducing device with a digital interface for reproducing the multi-program transport stream of the program recorded on a recording medium, the method comprising the steps of:

(a) inquiring as to whether to permit the transfer of program information corresponding to the program recorded on the recording medium, during a playback mode;

(b) receiving a response for permitting the reproduction of the program from the reproducing device;

(c) transferring a command for requesting the program information of the program recorded on the recording medium; and

(d) transferring a command indicating the program information of the program recorded on the recording medium from the reproducing device, ~~wherein the command indicating the program information is not included in program specific information (PSI) of the transport stream.~~

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31. (currently amended) A digital audio/video (A/V) device comprising:
a receiver having a digital interface, for receiving a transport stream and generating a program information control command based on program information received from a user, and for transferring the control command ~~in an asynchronous transfer mode via the digital interface, wherein the program information control command is not included in program specific information (PSI) of the transport stream~~ and a multi-program transport stream via the digital interface.

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32. (previously presented) The device of claim 31, further comprising an input device for inputting said program number of an intended program.

33. (previously presented) The device of claim 32, wherein the input device is a remote controller.

34. (currently amended) A digital audio/video (A/V) recording/reproducing device comprising:
a receiver including a digital interface for receiving a multi-program transport stream and a control command transferred from a digital audio/video (A/V) device, decoding the control command and recording/reproducing the multi-program transport stream corresponding to program information of the transport stream obtained by decoding the received control

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command, ~~wherein the control command is not included in program specific information (PSI) of the transport stream.~~

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35. (currently amended) A digital audio/video (A/V) device having a receiver for receiving a multi-program transport stream, wherein the receiver comprises:

a signal processor for parsing program specific information (PSI) of the received multi-program transport stream and decoding a video signal and an audio signal of an intended program based on the parsed PSI; and

a digital interface for generating a program information control command based on program information input by a user, and transferring a the multi-program transport stream output from the signal processor and the control command, ~~wherein the program information control command is not included in the PSI of the transport stream.~~

36. (previously presented): The device of claim 35, further comprising an input device for inputting the program number of an intended program.

37. (previously presented): The device of claim 36, wherein the input device is a remote controller.

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38. (previously presented) The device of claim 36, wherein the receiver is connected to at least one recording/reproducing device using the digital interface and the receiver and the recording/reproducing device are controlled by the input device.

39. (previously presented) The device of claim 35, wherein the digital interface generates a command based on the parsed PSI.

40. (previously presented) The device of claim 35, wherein the digital interface comprises an IEEE 1394 interface.

41. (previously presented) The device of claim 40, wherein the digital interface transfers the transport stream as isochronous packets during an isochronous transfer mode, and transfers the program information as asynchronous packets during an asynchronous transfer mode using a control command set.

42. (previously presented) The device of claim 41, wherein the control command set is an audio/video control command and transaction set (AV/C CTS).

43. (currently amended) The device of claim 35, wherein the digital interface transfers a the multi-program transport stream as isochronous packets in an isochronous transfer mode.

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44. (previously presented) The device of claim 36, wherein the digital interface transfers a multi-program transport stream as isochronous packets in an isochronous transfer mode.

45. (previously presented) The device of claim 35, wherein the digital interface transfers a single program transport stream as isochronous packets in an isochronous transfer mode.

46. (previously presented) The device of claim 38, wherein the digital interface comprises:

a first microcomputer including a transaction layer and a serial bus management layer as software, for generating the program information control command based on the program information input via the input device, using a write transaction and a read transaction;

a first link layer for adding an asynchronous header to the control command generated by the first microcomputer to convert the control command into serial data; and

a first physical layer for converting the control command serial data into an electrical signal.

47. (previously presented) The device of claim 46, wherein the receiver further comprises a first extra header inserter/remover for inserting an extra header into a transport stream being received, to constitute a data block packet for the IEEE 1394 transfer, and for removing the extra header inserted into a reproduced data block packet for the IEEE 1394 transfer, input via the digital interface.

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48. (currently amended) A digital audio/video (A/V) recording/reproducing device for recording/reproducing a multi-program transport stream transferred from a digital A/V device, the recording/reproducing device comprising:

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a digital interface for decoding a program information command transferred from the digital A/V device and for receiving the multi-program transport stream being transferred from the digital A/V device, ~~wherein the program information command is not included in program specific information (PSI) of the transport stream;~~ and

a signal processor for extracting an intended program from the multi-program transport stream received by the digital interface, based on the program information, and for recording the extracted result on recording media during a recording mode, and for outputting a reproduced transport stream to the digital interface during a playback mode.

49. (previously presented) The device of claim 48, wherein the second digital interface transfers a single program transport stream as isochronous packets in the isochronous transfer mode during a playback mode.

50. (previously presented) The device of claim 48, wherein the digital interface comprises an IEEE 1394 interface.

51. (previously presented) The device of claim 50, wherein the digital interface comprises:

a second physical layer for converting the program information command electrical signal, transferred from the first physical layer, into digital data;

a second link layer for converting the program information command digital data into parallel data, and for removing the asynchronous header; and

a second microcomputer including a transaction layer and a serial bus management layer as software, for recording the program information on a predetermined region of a recording medium by recognizing the program information command during a recording mode, and for reading out the program information recorded in the predetermined region during a playback mode.

52. (previously presented) The device of claim 51, wherein the recording/reproducing device further comprises a second extra header inserter/remover for removing an extra header inserted into the data block packet for the IEEE 1394 transfer, being received via the digital interface, and for inserting an extra header into the transport stream reproduced from the second signal processor, to constitute the data block packet for the IEEE 1394 transfer.

53. (previously presented) The device of claim 48, wherein the signal processor further comprises an on-screen graphic (OSG) generator for displaying the PSI of a transport stream being received on an OSG display.

54. (previously presented) The device of claim 53, wherein the OSG generator mixes the PSI with a graphic signal of a background screen to be output to the OSG display.

55. (previously presented) The device of claim 54, wherein the OSG generator mixes the program guide information with the decoded video signal to be output to the OSG display.

56. (previously presented) The device of claim 48, wherein the signal processor further comprises an on-screen display (OSD) generator for displaying the program guide information of a transport stream being received on an OSD display.

57. (previously presented) The device of claim 53, wherein the signal processor does not, in itself, parse the program guide information from a transport stream being received via the digital interface.

58. (currently amended) A method for transferring and receiving program information between a receiver with a digital interface for receiving a multi-program transport stream and a recording/ reproducing device with a digital interface for recording/reproducing the multi-program transport stream on/from a recording medium, the method comprising the steps of:

(a) receiving program information of an intended program to be recorded or reproduced; and

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(b) generating a command corresponding to the program information input for transferring the program information command to the recording/reproducing device, ~~wherein the program information command is not included in program specific information (PSI) of the transfer stream.~~

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59. (previously presented) The method of claim 58, wherein the step (a) comprises the steps of:

- (a1) parsing the program guide information from the transport stream;
- (a2) displaying the parsed program guide information; and
- (a3) inputting the program information of the intended program according to the displayed program guide information.

60. (previously presented) The method of claim 59, wherein in the step (a2), the parsed program guide information is displayed on an OSG display.

61. (previously presented) The method of claim 58, further comprising the steps of:

- (c) transferring a command for inquiring as to whether to permit the transfer of the program information of the program recorded in the recording medium, from the receiver to the recording/reproducing device, during a playback mode; and
- (d) receiving the program information of the program recorded in the recording medium, from the recording/reproducing device.

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62. (currently amended) A method for transferring program information between a receiver with a digital interface for receiving a multi-program transport stream and a recording and reproducing device with a digital interface for recording the multi-program transport stream on a recording medium, the method comprising the steps of:

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- (a) receiving program information of an intended program to be recorded or reproduced;
 - (b) transferring a command for inquiring as to whether to permit the recording or reproducing of the program;
 - (c) receiving a response for permitting the recording of the program from the recording and reproducing device; and
 - (d) transferring a command for performing the recording of the program corresponding to the program information input in the step (a), ~~wherein the command is not included in program specific information (PSI) of the transport stream.~~

63. (previously presented) The method of claim 62, further comprising the step of (e) receiving a response for notifying of the permission of the recording of the program corresponding to the program information, from the recording and reproducing device.

64. (previously presented) The method of claim 62, wherein the step (a) comprises the steps of:

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- (a1) parsing the program guide information from the transport stream;
- (a2) displaying the parsed program guide information; and
- (a3) inputting the program information of the intended program according to the displayed program guide information.

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65. (previously presented) The method of claim 64, wherein in the step (a2), the parsed program guide information is displayed on an OSG display.

66. (previously presented) The method of claim 64, wherein in the step (a2), the parsed program guide information is displayed on an OSD display.

67. (currently amended) A method for receiving program information by a receiver with a digital interface for receiving a multi-program transport stream and a reproducing device with a digital interface for reproducing the multi-program transport stream of the program recorded on a recording medium, the method comprising the steps of:

- (a) inquiring as to whether to permit the transfer of program information corresponding to the program recorded on the recording medium, during a playback mode;
- (b) receiving a response for permitting the reproduction of the program from the reproducing device;

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(c) transferring a command for requesting the program information of the program recorded on the recording medium, ~~wherein the command is not included in program specific information (PSI) of the transport stream;~~ and

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(d) receiving the program information of the program recorded on the recording medium from the reproducing device.

68. (currently amended) A digital audio/video (A/V) recording/reproducing device comprising:

a receiver including a digital interface for receiving a program information control command transferred from a digital A/V device, and recording/reproducing program information corresponding to the program information control command, ~~wherein the program information control command is not included in program specific information (PSI) of a transport stream.~~
